ABSTRACT OF THE INVENTION

The preparation of novel microemulsions to be used as precursors for solid nanoparticles is described. The microemulsion precursors consist of either alcohol-in-fluorocarbon microemulsions, liquid hydrocarbon-in-fluorocarbon microemulsions, or liquid hydrocarbon-in-water microemulsions. The formed solid nanoparticles have diameters below 200 nanometers and can be made to entrap various materials including drugs, magnets, and sensors. The solid nanoparticles can be made to target different cells in the body by the inclusion of a cell-specific targeting ligand. Methods of preparing the novel microemulsion precursors and methods to cure solid nanoparticles are provided.